

CURRICULUM VITAE

Name: Thomas Henrik Bugge

Education:

- 1989 M.Sc., Molecular Biology, The Institute of Microbiology, University of Copenhagen, Copenhagen, Denmark.
1993 Ph.D., Molecular Biology, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany.

Brief Chronology of Employment:

- 1999–present Chief, Proteases and Tissue Remodeling Unit, Oral and Pharyngeal Cancer Branch, National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD.
1997–1999 Associate Professor of Pediatrics, Children's Hospital Research Foundation, Cincinnati, Ohio.
1995-1996 Research Leader, The Finsen Laboratory, State University Hospital, Copenhagen, Denmark.
1993-1995 Postdoctoral Fellow, The Finsen Laboratory, State University Hospital, Copenhagen, Denmark/ Children's Hospital Research Foundation, Cincinnati, Ohio.
1990-1993 Graduate Student, EMBL, Heidelberg, Germany.
1987-1989 Pregraduate (M.Sc.) student, Laboratory of Tumor Virology, The Fibiger Institute, Copenhagen, Denmark.

Honors and Other Special Scientific Recognition:

- 2003 "NIDCR EEO Special Achievement Award" for "Extraordinary Initiative in Promoting Diversity and Career Development for Students and Fellows and Successfully Recruiting Underrepresented Minority Students".
2003 "NIDCR Staff Award" for Services to the National and International Research Communities.
1999 Nominated for the "International Society for Fibrinolysis and Thrombolysis (ISTF) Prize 2000".
1996 Received the "1996 Creativity Award" at the XIIIth International Congress on Fibrinolysis and Thrombolysis, Barcelona, Spain.
1994 -1995 Senior Researcher, The Danish Medical Research Council, Denmark.
1991-1992 Travel Grant, The Danish Plasmid Foundation, Glostrup, Denmark.
1991-1992 Fellowship, The Danish Cancer Research Foundation, Copenhagen, Denmark.
1991-1992 Travel Grant, The Danish Research Academy, Aarhus, Denmark.
1990-1991 Travel Grant, The Danish Research Academy, Aarhus, Denmark.
1988-1989 Predoctoral Fellowship, EMBL, Heidelberg, Germany.
1988-1989 Pregraduate Fellowship, The Danish Cancer Society, Copenhagen, Denmark.

Grants:

- 2003 NIAID Support of Intramural Biodefense Research from ICs other than NIAID, "Imaging Anthrax Toxin Proteolytic Activation." Priority Score; 2nd of 65 total proposals. Estimated Total Direct Costs: \$ 463,016.
- 2002 DOD/Breast Cancer Center of Excellence (Subcontract P.I.; P.I. Dr. B. F. Sloane) "Validation of Proteases as Therapeutic Targets in Breast Cancer: Functional Imaging of Protease Expression, Activity and Inhibition." Total Direct Costs: \$ 5,700,000. Subcontract PTRU \$ 197,207.
- 1999 NIH/NCI, R13, CA82133-01, (Co-investigator; P.I. Dr. B. F. Sloane) "Conference of the International Proteolysis Society." Total Direct Costs: \$ 7,500.
- 1999 Board of Trustees Grant, Children's Hospital Research Foundation (extension), "Determination of the role of the plasminogen activation system in cancer invasion and metastasis by tumor transplantation studies in plasminogen-deficient mice", \$ 6,600.
- 1999 Supplement to NIH/NCI, RO1 CA79994-01, "Protease Consortium/Coagulation and Fibrinolysis in Tumor Progression." Grant relinquished after the transfer of the research program to the NIH intramural program.
- 1998 NCI, RO1, CA79994-01, "Coagulation and Fibrinolysis in Tumor Progression". (Initial Review Group Priority Score 133, Percentile 1.4) Total Direct Costs: \$ 750,786. Grant relinquished after the transfer of research program to the NIH Intramural Program.
- 1997 Danish Medical Research Council, "Transgenic molecular genetic analysis of the function and interaction of matrix degrading protease systems in tissue remodeling and cancer invasion", \$ 29,000.
Board of Trustees Grant, Children's Hospital Research Foundation, "Determination of the role of the plasminogen activation system in cancer invasion and metastasis by tumor transplantation studies in plasminogen-deficient mice", \$ 80,000.
- 1995 Vera and Carl Johan Michaelsen Foundation Grant, "Investigation of the Molecular mechanisms of cancer invasion and metastasis by gene targeting", \$ 20,000.

Patents:

Ref No. E-295-01/0, Thomas Bugge (Co-inventors, Dr. Shi-Hui Liu, Dr. Stephen Leppla, and David Mitola): for vivo imaging of cell-surface protease activity using modified anthrax toxins.
Pending

DHHS Ref No.E-293-99/1; PCT/US00/26192, First Inventor: Stephen Leppla. :Mutated anthrax toxin protective antigen proteins that specifically target cells containing high amounts of cell-surface metalloproteinases or plasminogen activator receptors.

Pending "Exploiting the Multimeric Nature of Certain Protein Toxins to Target Cells Having More than One Identifying Characteristic", First Inventor: Stephen Leppla.

Editorial Responsibilities:

- 2003-present Editorial Board, Oral Oncology.
2002-present Handling Editor, Thrombosis and Haemostasis.

Symposia Organized:

- 2006 International Organizing Committee, International Society for Fibrinolysis and Proteolysis Meeting, San Diego.
- 2004 Organizer (with Dudley Strickland, Toni Antalis, and Dan Lawrence) "The Xth International Workshop on Molecular and Cellular Biology of Plasminogen Activation", Washington, D.C.
- 2004 Chair, Plenary Session I, XVIIth International Congress on Fibrinolysis and Proteolysis, Melbourne, Australia, (March 21-25, 2004).
- 2001 Session Chair, Proteolysis in Cancer, "The Second Meeting of the International Proteolysis Society", Munich, Germany.
- 2001 Scientific Advisory Board, "The Second Meeting of the International Proteolysis Society", Munich, Germany.
- 2000 Discussion Moderator "Forbeck Symposium on Proteases as Cancer Therapeutic Targets" Captiva Island, FL.
- 1999 Co-organizer, "The First Meeting of the International Proteolysis Society", Mission Point Resort, Mackinac Island, MI.
- 1999 Abstract Selection Committee, "The First Meeting of the International Proteolysis Society", Mission Point Resort, Mackinac Island, MI.

Invited Lectures and Presentations (since 1995):

- 2004- Second Meeting of the American Society for Matrix Biology, San Diego, CA (November 10-13, 2004).
Plenary Speaker, XVIIth International Congress on Fibrinolysis and Proteolysis, Melbourne, Australia, (March 21-25, 2004).
- 2003- Gordon Conference on Plasminogen Activation and Extracellular Proteolysis.
32nd Annual Meeting of Danish Society for Biochemistry and Molecular Biology Laboratory of Cell Biology, National Heart Lung and Blood Institute, Bethesda, MD.
EMBL, Monterotondo, Italy.
47th Annual Meeting of the Society of Thrombosis and Haemostasis Research, Innsbruck, Austria.
- 2002 Celera, South San Francisco, CA.
Immunology /Cell Biology Seminar series, NCI-Frederick, Frederick, MD.
National Cancer Institute-sponsored workshop on "Proteases and Cancer: Biology and Clinical Applications Workshop", Bethesda, MD.
State University Hospital, Copenhagen, Denmark.
"Peptide Toxins Targeted to Cancer Symposium: Experience from animal studies and clinical trials". Copenhagen, Denmark.

- American Association for Cancer Research, Proteases, Extracellular Matrix and Cancer, Hilton Head, SC.
- Gordon Conference on Proteolytic Enzymes and Their Inhibitors, New London, NH.
- Lombardi Cancer Center, Georgetown University Medical Center, Washington, DC.
- Laboratory of Cellular Carcinogenesis and Tumor Promotion, National Cancer Institute, Bethesda, MD.
- 2001- Oral Infection and Immunity Branch, National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD.
- Department of Vascular Biology, American Red Cross.
- Corvas International, Inc., San Diego, CA.
- State University Hospital, Copenhagen, Denmark.
- 2000- Novo/Nordisk A/S, Maaloev, Denmark.
- Entremed, Rockville, MD.
- Oral Infection and Immunity Branch, National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD.
- Gene Therapy and Therapeutics Branch, National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD.
- Craniofacial Development and Regeneration Branch, National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD.
- 1999- Melbourne Matrix Metalloproteinase Mini-Symposium, Melbourne, Australia.
- Protease Consortium Meeting, Vanderbilt University, Nashville, TN.
- Developmental Biology Protease Symposium, Wayne State University, Detroit, MI.
- Grand Rounds Speaker, Karmanos Cancer Institute, Wayne State University, Detroit, MI.
- The National Institute of Dental and Craniofacial Research, The National Institutes of Health, Bethesda, MD.
- State University Hospital, Copenhagen, Denmark.
- American Association for Cancer Research and ACTA Pathologica Microbiologica Immunologica Scandinavica meeting on "Proteases and Protease Inhibitors in Cancer", Nyborg, Denmark.
- The Burnham Institute, Department of Cell Adhesion-Extracellular Matrix Biology, San Diego, CA.
- "Molecular Medicine Seminar Series", University of Umea, Umea, Sweden.
- Affinity Group Seminar Series, Scripps Research Institute, San Diego, CA.
- Roche Bioscience, Palo Alto, CA.
- 1997- Plenary Speaker, 17th International Congress of Biochemistry and Molecular Biology/American Society of Biochemistry and Molecular Biology, San Francisco, CA.
- State University Hospital, Copenhagen, Denmark.
- Differentiation Programme, EMBL, Heidelberg, Germany.
- Uniklinik Freiburg, University of Freiburg, Freiburg, Germany.
- 1996- Arris Pharmaceuticals, South San Francisco, CA.
- Stony Brook, Department of Immunology and Pathology, Stony Brook, NY.
- Tulane Medical School, Department of Biochemistry, New Orleans, LA.

- The Danish Biological Society, Copenhagen, Denmark.
Institute of Microbiology, University of Copenhagen, Copenhagen, Denmark.
Gordon Conference on Proteolytic Enzymes and their Inhibitors. New London, NH.
Prize Lecture, XIIIth International Congress on Fibrinolysis and Thrombolysis, Barcelona, Spain.
Plenary Lecture, 2nd Joint Meeting of the Wound Healing Society & The European Tissue Repair Society, Boston, MA.
- 1995- Bristol-Myers Squibb Lecture, Annual Meeting, Danish Cancer Research Society, Copenhagen, Denmark.

Ad-hoc Reviewer:

American Journal of Pathology; Blood; Cancer Research; Circulation; Clinical Cancer Research; EMBO Journal; International Journal of Cancer; Journal of the National Cancer Institute; Molecular and Cellular Biology; Molecular Carcinogenesis; Nature Genetics Neoplasia; Oncogene; Proceedings of the National Academy of Sciences (USA); The Journal of Biological Chemistry; The Journal of Cell Biology; The Journal of Clinical Investigation; The Journal of Clinical Pathology; The Journal of Histochemistry and Cytochemistry; Thrombosis and Haemostasis; Trends in Cardiovascular Medicine

Research Services:

Intramural

- 2004 Chair, Institutional Animal Care and Use Committee, NIDCR.
2003 NIDCR Veterinary Resources Core Contracts Technical Evaluation Panel.
2000 NIH Central Vivarium Animal Research Center Core Planning Committee
1999 Animal Care Facility Oversight Committee, NIDCR.
1999 Gene Targeting Facility Oversight Committee, NIDCR.
1999 Institutional Animal Care and Use Committee, NIDCR.

Extramural:

- 2004 Ad Hoc reviewer, The Telethon Foundation, Italy.
2004 Study Section: Regular Member, American Cancer Society, Cell Structure and Metastasis Committee.
2002 Study Section: Congressionally Directed Medical Research Programs, Prostate Cancer Research Program, Pathobiology
2003 Ad-hoc Reviewer, Promotion of Dr. Chen-Yong Lin to Associate Professor, Lombardi Cancer Center, Georgetown University Medical Center.
2002 Ad-hoc Reviewer, Promotion of Dr. Shijie Sheng, Department of Pathology, Wayne State University to Associate Professor with Tenure, Detroit, MI.
2002 Ad-hoc Reviewer, Promotion of Li Zhang to Associate Scientist, Department of Vascular Biology, American Red Cross, Rockville, M.D.
2002 Study Section: Ad Hoc Member, American Cancer Society, Cell Structure and Metastasis Committee.

Publications:

1. Andreassen H., Bohr H., Bohr J., Brunak S., Bugge T., Cotterill R.M., Jacobsen C., Kusk P., Lautrup B., Petersen S.B., Sæhrmark T., and Ulrich K. Analysis of the secondary structure of the human immunodeficiency virus (HIV) proteins p17, gp120, and gp41 by computer modeling based on neural networks methods. *J. Acquir. Immune. Defic. Syndr.*, **6**:615-622, 1990.
2. Bugge T.H., Lindhardt B.Ø., Hansen L.L., Kusk P., Hulgaard E.F., Holmbäck K., Klasse P.J., Zeuthen, J., and Ulrich K. Analysis of a highly immunodominant epitope in the human immunodeficiency virus type 1 transmembrane glycoprotein, gp41, defined by a human monoclonal antibody. *J. Virol.*, **64**:4123-4129, 1990.
3. Bugge T.H., Hansen L.L., Lindhardt B.Ø., Kvinesdal B., Kusk P., Holmbäck K., Hulgaard, E.F., and Ulrich K. Competition ELISA using a human monoclonal antibody for the detection of antibodies against human immunodeficiency virus type 1. *J. Virol., Methods*, **32**:1-10, 1991.
4. Kusk P., Bugge T.H., Lindhardt B.Ø., Hulgaard E.F., and Holmbäck, K. Mapping of linear B-cell epitopes on the major core protein p24 of human immunodeficiency virus type 1 (HIV-AIDS) *Res. Hum. Retroviruses.*, **8**:1789-1794, 1992.
5. Kusk, P., Lindhardt, B.Ø., Bugge, T.H., Holmbäck, K., and Hulgaard, E.F. Mapping of a new immunodominant human linear B-cell epitope on the vpu protein of the human immunodeficiency virus type 1. *J. Acquir. Immune. Defic. Syndr.*, **6**:334-338, 1993.
6. Holmbäck, K., Kusk, P., Hulgaard E.F., Bugge T.H., Scheibel E., and Lindhardt, B.Ø. Autologous antibody response against the principal neutralizing domain of human immunodeficiency virus type 1 isolated from infected humans. *J. Virol.*, **67**:1612-1619, 1993.
7. Kusk, P., Holmbäck K., Lindhardt B.Ø., Hulgaard E.F., and Bugge, T.H. Mapping of two new human B-cell epitopes on HIV-1 gp120. *AIDS*, **6**:1451-1456, 1992.
8. Disela C., Glineur C., Bugge T., Sap J., Stengl G., Dodgson J., Stunnenberg H.G., Beug H., and Zenke M. v-erbA overexpression is required to extinguish c-erbA function in erythroid cell differentiation and regulation of the erbA target gene CA II. *Genes & Dev.*, **5**:2033-2047, 1991.
9. Vivanco-Ruiz M.M, Bugge T.H., Hirchmann P., and Stunnenberg H.G. Functional characterization of a natural retinoic acid responsive element. *EMBO J.*, **10**:3829-3838, 1991.
10. Bugge T.H., Pohl J., Lonnoy O., and Stunnenberg H.G. RXR, a promiscuous partner of retinoic acid and thyroid hormone receptors. *EMBO J.*, **11**:1409-1418, 1992.
11. Barettino D., Bugge T.H., Bartunek P., Vivanco-Ruiz M.D., Sonntag-Buck V., Beug H., Zenke M., and Stunnenberg H.G. Unliganded T₃R, but not its oncogenic variant v-erbA suppresses RAR dependent transactivation by titrating out RXR. *EMBO J.*, **12**:1343-1354, 1993.
12. Islam T.C., Bugge T.H., and Bohm S. The long terminal repeat of VL30 retrotransposons contains sequences that determine retinoic acid-induced transcription in cultured keratinocytes. *J. Biol. Chem.*, **268**:3251-3259, 1993.

13. Bugge T.H., Flick M.J., Daugherty C.C., and Degen J.L. Plasminogen deficiency causes severe thrombosis but is compatible with development and reproduction. *Genes & Dev.*, **9**:794-807, 1995.
14. Bugge T.H., Suh T.T., Flick M.J., Daugherty C.C., Rømer J., Solberg H., Ellis V., Danø K., and Degen J.L. The receptor for urokinase-type plasminogen activator is not essential for mouse development or fertility. *J. Biol. Chem.*, **270**:16886-16894, 1995.
15. Rømer J., Bugge T.H., Pyke C., Lund L.R., Flick M.J., Degen J.L., and Danø K. Impaired wound healing in mice with a disrupted plasminogen gene. *Nature Medicine*, **2**:287-292, 1996.
16. Rømer J., Bugge T.H., Pyke C., Lund L.R., Flick M.J., Degen J.L., and Danø K. Plasminogen and wound healing (Letter to the editor). *Nature Medicine*, **2**:725, 1996.
17. Bugge T.H., Flick M.J., Danton M.J., Daugherty C.C., Rømer, J., Danø K., Carmeliet P., Collen D., and Degen J.L. Urokinase-type plasminogen activator is effective in fibrin clearance in the absence of its receptor or tissue-type plasminogen activator. *Proc. Natl. Acad. Sci. (USA)*, **93**:5899-5904, 1996.
18. Bugge T.H., Xiao Q., Kombrinck K.W., Flick M.J., Holmbäck K., Danton M.J., Colbert, M.C., Witte, D.P., Fujikawa, K., Davie, E.W., and Degen, J.L. Fatal embryonic bleeding events in mice lacking tissue factor, the cell-associated initiator of blood coagulation. *Proc.Natl. Acad. Sci. (USA)*, **93**:6258-6263, 1996.
19. Bugge, T.H., Kombrinck K., Flick M.J., Daugherty C.C., Danton M.J., and Degen J.L. Loss of fibrinogen rescues mice from the pleiotropic effects of plasminogen deficiency. *Cell*, **87**:709-719, 1996.
20. Tsirka, S.E., Rogove, A.D., Bugge, T.H., Degen, J.L., and Strickland, S. An extracellular proteolytic cascade promotes neuronal degeneration in the mouse hippocampus. *J. Neurosci.*, **17**:543-552, 1997.
21. Coleman J.L., Gebbia J.A., Piesman J., Degen, J.L., Bugge, T.H., and Benach, J.L. Plasminogen is required for efficient dissemination of *Borrelia burgdorferi* in ticks and for enhancement of spirochetemia in the vertebrate host. *Cell*, **89**:1111-1119, 1997.
22. Tsirka S.E., Bugge T.H., Degen J.L., and Strickland S. Neuronal death in the central nervous system demonstrates a non-fibrin substrate for plasmin. *Proc. Natl. Acad. Sci. (USA)*, **94**:9779-9781, 1997.
23. Xiao Q., Danton M.J., Witte D.P., Kowala M.C., Valentine M.T., Bugge T.H., and Degen, J.L. Plasminogen-deficiency accelerates vessel wall disease in mice predisposed to atherosclerosis. *Proc. Natl. Acad. Sci. (USA)*, **94**:10335-10340, 1997.
24. Bugge T.H., Kombrinck K.W., Xiao Q., Holmbäck K., Daugherty C. C., Witte, D. P., and Degen J.L. Growth and dissemination of Lewis lung carcinoma in plasminogen-deficient mice. *Blood*, **90**:4522-4531, 1997.
25. Kao W.-Y., Kao C.W., Kaufman A.H., Kombrinck K.W., Converse R.L., Good W.V., Bugge T.H., and Degen J.L. Healing of corneal epithelial defects in plasminogen and fibrinogen-deficient mice. *Investigative Ophthalmology & Visual Science*, **39**:502-508, 1998.
26. Drew A.F., Kaufman A.H., Kombrinck K.W., Danton M.J., Daugherty C.C., Degen J.L., and Bugge T.H. Ligneous conjunctivitis in plasminogen-deficient mice. *Blood*, **91**:1616-1624, 1998.

27. Bugge T.H., Lund L.R., Kombrinck K.W., Nielsen B.S., Holmbäck K. Drew A.F., Flick M.J., Witte D.P., Danø K. and Degen J.L. Reduced metastasis of Polyoma virus middle T antigen-induced mammary cancer in plasminogen-deficient mice. *Oncogene*, **16**:3097-3104, 1998.
28. Sun Y.W., Witte D. P., Degen J.L., Colbert M.C., Burkart M.C., Holmbäck K., Xiao Q., Bugge T.H., and Degen S.J. Prothrombin deficiency results in embryonic and neonatal lethality in mice. *Proc. Natl. Acad. Sci. (USA)*, **95**:7597-7602, 1998.
29. Busso N., Péclat V., Van Ness K., Kolodzieszczyk E., Degen J.L., Bugge T.H., and So A. Exacerbation of antigen-induced arthritis in urokinase-deficient mice. *J. Clin. Invest.*, **102**:41-50, 1998.
30. Gebbia J.A., Monco J.C., Degen J.L., Bugge T.H., and Benach J.L. The plasminogen activation system enhances brain and heart invasion in murine relapsing fever Borreliosis. *J. Clin. Invest.*, **103**:81-87, 1999.
31. Chen, Z.L, Indyk J.A., Bugge T.H., Kombrinck K.W., Degen, J.L., and Strickland S. Neuronal death and blood-brain barrier breakdown after excitotoxic injury are independent processes. *J. Neurosci.*, **19**:9813-9820, 1999.
32. Lund L.R., Rømer J., Bugge T.H., Nielsen B.S., Frandsen T.L., Degen J.L., Stephens R.W., and Danø K. Functional overlap between two classes of matrix-degrading proteases in wound healing. *EMBO J.*, **18**:4645-4656, 1999.
33. Bezerra J.A., Bugge T.H., Melin-Aldana H., Sabla G., Kombrinck K.W., Witte D.P., and Degen J.L. Plasminogen deficiency leads to impaired remodeling after a toxic injury to the liver. *Proc. Natl. Acad. Sci. (USA)*, **96**:15143-15148, 1999.
34. List K., Jensen O.N., Bugge T.H., Lund L.R. Ploug, M., Danø K., and Behrendt N. Plasminogen-independent initiation of the pro-uPA activation cascade *in vivo*. Activation of pro-urokinase by glandular kallikrein (mGK-6) in plasminogen-deficient mice. *Biochemistry*, **39**:508-515, 2000.
35. Drew A.F., Schiman H.L., Kombrinck K.W., Bugge T.H., Degen J.L., and Kaufman A.H. Persistent corneal haze after excimer laser photokeratectomy in plasminogen-deficient mice. *Invest. Ophthalmol. Vis. Sci.*, **41**:67-72, 2000.
36. Wu Y.P., Siao C.J., Lu W., Sung T.C., Frohman M.A., Milev P., Bugge T.H., Degen, J.L., Levine J.M., Margolis R.U., and Tsirk, S.E. The tissue plasminogen activator (tPA)/plasmin extracellular proteolytic system regulates seizure-induced hippocampal mossy fiber outgrowth through a proteoglycan substrate. *J. Cell Biol.*, **148**:1295-1304, 2000.
37. Lund L.R., Bjørn S.F., Sternlicht M.D., Nielsen B.S., Solberg H., Usher P.A., Østerby R., Christensen I.J., Stephens R.J., Bugge T.H., Danø K., and Werb Z. Lactational competence and involution of the mouse mammary gland require plasminogen. *Development*, **127**:4481-4492, 2000.
38. Goguen J.D., Bugge T.H, and Degen J.L. Role of the pleiotropic effects of plasminogen deficiency in infection experiments with plasminogen-deficient Mice. *Methods*, **21**:179-183, 2000.
39. Drew A.F., Tucker H.L., Kombrinck K.W., Simon D.I., Bugge T.H., and Degen J.L. Plasminogen is a critical determinant of vascular remodeling in mice. *Circulation Research*, **87**:133-139, 2000.

40. Palumbo J.S., Kombrinck K.W., Drew A.F., Grimes,T.S., Kiser J.H., Degen J.L., and Bugge T. H. Fibrinogen is an important determinant of the metastatic potential of circulating tumor cells. *Blood*, **96**:3302-3309, 2000.
41. Bezerra J.A., Currier A.R., Melin-Aldana H., Sabla G., Bugge T.H., Kombrinck K.W., and Degen J.L. Plasminogen Activators Direct Reorganization of the Liver Lobule after Acute Injury. *Am. J. Pathol.*, **158**:921-929, 2001.
42. Liu, S., Bugge, T.H., and Leppla, S.H. Targeting tumor cells by urokinase plasminogen activator-activated anthrax toxin protective antigens. *J. Biol. Chem.*, **276**:17976-17984, 2001.
43. Engelholm L.H., Nielsen B.S., Netzel-Arnett S., Solberg, H., Chen X.D., Lopez Garcia J.M., Lopez-Otin C., Young M.F., Birkedal-Hansen H., Danø K., Lund L. R., Behrendt N., and Bugge T.H. The urokinase plasminogen activator receptor-associated protein/Endo 180 is coexpressed with its interaction partners uPAR and matrix metalloproteinase-13 during osteogenesis. *Lab. Invest.*, **81**:1403-1414, 2001.
44. Yepes M., Sandkvist M., Coleman T.A., Moore E., Wu J.-Y., Mitola D., Bugge T.H., and Lawrence D. Regulation of seizure spreading by neuroserpin and tissue plasminogen activator is plasminogen-independent. *J.Clin. Invest.*, **109**:1571-1578, 2002.
45. List K., Haudenschild C.C., Szabo R., Chen W., Wahl S.M., Swaim W., Engelholm L.H., Behrendt N., and Bugge T.H. Matriptase/MT-SP1 is required for postnatal survival, epidermal barrier function, hair follicle development, and thymic homeostasis. *Oncogene*, **21**:3765-3779, 2002.
46. Bannach F.G., Gutierrez A., Fowler B.J., Bugge T.H., Degen J. L., Parmer R.J., and Miles L.A. Localization of regulatory elements mediating constitutive and cytokine-stimulated plasminogen gene expression. *J. Biol. Chem.*, **277**:38579-38588.
47. Netzel-Arnett S.A., Mitola D.J., Yamada S., Chrysovergis K., Holmbeck K., Birkedal-Hansen H., and Bugge T.H. Collagen Dissolution by Keratinocytes Requires Cell Surface Plasminogen Activation and Matrix Metalloproteinase Activity. *J. Biol. Chem.* **277**: 45154-45161, 2002.
48. Curino A., Mitola D., Aaronson H., McMahon G., Raja K., Keegan A., Lawrence D.A, and Bugge T.H. Plasminogen promotes sarcoma growth and suppresses the accumulation of tumor-infiltrating macrophages. *Oncogene*, **21**:8830-8842, 2002.
49. Montaner S., Sodhi A., Molinolo A., Bugge T.H., Sawai E.T., He, Y., Li Y., Ray P.E., and Gutkind J.S. Endothelial infection with KSHV genes in vivo reveals that vGPCR initiates Kaposi's sarcomagenesis and can promote the tumorigenic potential of viral latent genes. *Cancer Cell*, **3**:23-36, 2003.
50. Liu S., Aaronson H., Mitola D., Leppla S.H., and Bugge T.H. Potent anti-tumor activity of a urokinase-activated engineered anthrax toxin. *Proc. Natl. Acad. Sci. (USA)*, **100**:657-662, 2003.
51. Engelholm L.H., List K., Netzel-Arnett S., Cukierman E., Mitola D.J., Aaronson H., Kjøller L., Larsen J.K., Yamada K.M., Stricklan D.S., Holmback K., Danø K., Birkedal-Hansen H., Behrendt N., and Bugge T.H. uPARAP/Endo180 is essential for cellular uptake of collagen and promotes fibroblast collagen adhesion. *J. Cell Biol.*, **160**:1009-1015, 2003.
52. Pedersen T.X., Leethanakul C., Patel V., Mitola D.J., Lund L.R., Danø K., Johnsen M., Gutkind J.S., and Bugge T.H. Laser capture microdissection-based *in vivo* genomic profiling of wound keratinocytes identifies similarities and differences to squamous cell carcinoma. *Oncogene*, **22**:3964-3976, 2003.

53. Liu S., Schubert R.L., Bugge T.H., and Leppla S.H. Anthrax toxin: Structures, functions, and tumor targeting. *Expert Opin. Biol. Ther.*, **3**:843-853, 2003.
54. Makarova A., Mikhailenko I., Bugge T.H., List K., Lawrence D., and Strickland, D.K. The LDL receptor-related protein modulates protease activity in the brain by mediating the cellular internalization of both neuroserpin and neuroserpin:tPA complexes. *J. Biol. Chem.*, **278**:50250-50258, 2003.
55. Yepes M., Sandkvist M., Moore E., Bugge T.H., Strickland D.K., and Lawrence D. Tissue-type plasminogen activator opens the blood brain barrier via the low density lipoprotein receptor. *J. Clin. Invest.*, **112**:1533-1540, 2003.
56. List K., Szabo R., Wertz P.W., Segre J., Haudenschild C.C., Kim S.-Y., and Bugge T.H. Loss of proteolytically processed filaggrin caused by epidermal deletion of Matriptase/MT-SP1. *J. Cell Biol.*, **163**:901-910, 2003.
57. Kjøller L., Engelholm L., Høyer-Hansen M., Danø K., Bugge T.H., and Behrendt N. uPARAP/endo180 directs lysosomal delivery and degradation of collagen. *Exp. Cell. Res.*, **293**:106-116, 2004.
58. Law B., Curino A., Bugge T.H., Weissleder R., and Tung C.H. Design, synthesis and characterization of urokinase-type plasminogen activator sensitive near-infrared reporter. *Chem. Biology*, **11**:99-106, 2004.

Manuscripts in press

58. Abi-Habib R.J., Liu S., Bugge T.H., Leppla S.H., and Frankel, A.E. Urokinase activated recombinant diphtheria toxin targeting the granulocyte-macrophage colony-stimulating factor receptor (dtu2gmcsf) is selectively cytotoxic to human acute myeloid leukemia blasts. *Blood*, *in press*.
59. Curino A., Patel V., Nielsen B.S., Gutkind J.S., and Bugge T.H. Detection of uPA activity in oral cancer by laser capture microdissection combined with plasminogen-casein zymography. *Oral Oncology*. *In press*

Chapters and Reviews

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